

We claim:

1. A method for generating a particular state of a pseudorandom sequence of items, comprising:
  - 5 - providing a starting state of the pseudorandom sequence of items which pseudorandom sequence of items has a corresponding finite number of potential states;
  - providing a first mask for generating a next state of the pseudorandom sequence of items;
  - 10 - identifying a desired subsequent state of the pseudorandom sequence of items;
  - providing a plurality of additional masks for generating corresponding subsequent states of the pseudorandom sequence of items, wherein the corresponding subsequent states are unevenly distributed throughout the finite number of potential states for the pseudorandom sequence of items;
  - 15 - using at least the starting state of the pseudorandom sequence of items and at least one of the plurality of additional masks to calculate the desired subsequent state of the pseudorandom sequence of items.
- 20 2. The method of claim 1 wherein providing a plurality of additional masks for generating corresponding subsequent states of the pseudorandom sequence of items, wherein the corresponding subsequent states are unevenly distributed throughout the finite number of potential states for the pseudorandom sequence of items includes providing a plurality of additional masks for generating corresponding subsequent states of the pseudorandom sequence of items, wherein the corresponding subsequent states are distributed substantially logarithmically throughout the finite number of potential states for the pseudorandom sequence of items.
- 25 3. The method of claim 1 wherein providing a plurality of additional masks comprises providing between 5 and 15 additional masks.

4. The method of claim 1 wherein identifying a desired subsequent state of the pseudorandom sequence of items comprises identifying an offset from the starting state and adding the offset to a sequential position of the starting state of the pseudorandom sequence of items.

5. A method for generating a particular state of a pseudorandom sequence of items, comprising:

- providing a starting state of the pseudorandom sequence of items which pseudorandom sequence of items has a corresponding finite number of potential states;
- identifying a desired subsequent state of the pseudorandom sequence of items;
- moving from the starting state to the desired subsequent state by sequentially selecting interim pseudorandom sequence generating polynomials that correspond to multi-state moves of ever decreasing size until one of:
  - the desired subsequent state is attained; and
  - only next-state moves are made before attaining the desired subsequent state.

6. The method of claim 5 wherein sequentially selecting pseudorandom sequence generating polynomials includes:

- providing a plurality of additional pseudorandom sequence generating polynomials for generating corresponding subsequent states of the pseudorandom sequence of items;
- using at least one of the additional pseudorandom sequence generating polynomials to generate at least one of the interim pseudorandom sequence generating polynomials.

7. The method of claim 6 wherein providing a plurality of additional pseudorandom sequence generating polynomials for generating corresponding subsequent states of the pseudorandom sequence of items includes providing a plurality of additional pseudorandom sequence  
5 generating polynomials for generating corresponding subsequent states of the pseudorandom sequence of items, wherein the corresponding subsequent states are unevenly distributed throughout the finite number of potential states for the pseudorandom sequence of items.

10 8. A method for generating a particular state of a pseudorandom sequence of items, comprising:  
- providing a starting state of the pseudorandom sequence of items which pseudorandom sequence of items has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of  
15 items can be calculated by a corresponding pseudorandom sequence generating polynomial;  
- providing at least one pseudorandom sequence generating polynomial;  
- identifying a desired subsequent state of the pseudorandom sequence of items;  
20 - using at least one of the at least one pseudorandom sequence generating polynomial to generate a specific pseudorandom sequence generating polynomial that will calculate the pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items;  
25 - using the specific pseudorandom sequence generating polynomial to generate the pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

9. The method of claim 8 wherein providing at least one pseudorandom  
30 sequence generating polynomial includes providing a plurality of pseudorandom sequence generating polynomials.

10. The method of claim 9 wherein providing a plurality of pseudorandom sequence generating polynomials includes providing a plurality of pseudorandom sequence generating polynomials for generating  
 5 corresponding subsequent states of the pseudorandom sequence of items, wherein the corresponding subsequent states are unevenly distributed throughout the finite number of potential states for the pseudorandom sequence of items.

10 11. The method of claim 8 to wherein using at least one of the at least one pseudorandom sequence generating polynomial to generate a specific pseudorandom sequence generating polynomial includes iteratively using a plurality of pseudorandom sequence generating polynomials to sequentially generate pseudorandom sequence generating polynomials to thereby  
 15 generate the specific pseudorandom sequence generating polynomial.

12. A method for generating a specific pseudorandom sequence generating polynomial, comprising:  
 - providing a starting state of a pseudorandom sequence of items which  
 20 pseudorandom sequence of items has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of items can be calculated by a corresponding pseudorandom sequence generating polynomial;  
 - providing at least one pseudorandom sequence generating polynomial;  
 25 - identifying a desired subsequent state of the pseudorandom sequence of items;  
 - using at least one of the at least one pseudorandom sequence generating polynomial to generate the specific pseudorandom sequence generating polynomial, which specific pseudorandom sequence generating polynomial  
 30 will calculate the pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

13. The method of claim 12 and further comprising using the specific pseudorandom sequence generating polynomial to generate the pseudorandom sequence of items that corresponds to the desired subsequent  
5 state of the pseudorandom sequence of items.

14. A method for generating a particular state of a pseudorandom sequence having 32,767 potential states wherein each state of the pseudorandom sequence can be calculated by a corresponding  
10 pseudorandom sequence generating polynomial, comprising:

- providing a starting state of the pseudorandom sequence;
- providing a first pseudorandom sequence generating polynomial that comprises a next-state pseudorandom sequence generating polynomial;
- providing between 5 and 25 additional pseudorandom sequence generating  
15 polynomials for generating corresponding subsequent states of the pseudorandom sequence, wherein the corresponding subsequent states are unevenly distributed throughout the 32,767 potential states for the pseudorandom sequence of items;
- iteratively using at least one of the first and additional pseudorandom  
20 sequence generating polynomials to generate a specific pseudorandom sequence generating polynomial that will calculate the pseudorandom sequence of items that corresponds to the particular state of the pseudorandom sequence;
- using the specific pseudorandom sequence generating polynomial to  
25 generate the pseudorandom sequence that corresponds to the particular state of the pseudorandom sequence.

15. The method of claim 14 wherein the pseudorandom sequence comprises a pseudorandom sequence of binary digits.

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16. A method for creating a pseudorandom sequence generating polynomial, comprising:

- providing a starting state of a pseudorandom sequence of items, which pseudorandom sequence of items has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of items can be calculated by a corresponding pseudorandom sequence generating polynomial;

- providing at least one pseudorandom sequence generating polynomial;

- identifying a desired subsequent state of the pseudorandom sequence of items;

- using the at least one pseudorandom sequence generating polynomial to generate a first interim pseudorandom sequence generating polynomial that can calculate a first interim pseudorandom sequence of items that corresponds to a first interim subsequent state of the pseudorandom sequence of items, which first interim subsequent state is more proximal to the desired subsequent state than the starting state.

17. The method of claim 16 and further comprising using at least the first interim pseudorandom sequence generating polynomial to generate a second interim pseudorandom sequence generating polynomial that can calculate a second interim pseudorandom sequence of items that corresponds to a second interim subsequent state of the pseudorandom sequence of items, which second interim subsequent state is more proximal to the desired subsequent state than the first interim subsequent state.

18. The method of claim 16 and further comprising using a subsequently generated pseudorandom sequence generating polynomial to generate a final pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

19. A method for creating a pseudorandom sequence generating polynomial, comprising:

- providing a starting state of a pseudorandom sequence of items, which pseudorandom sequence of items has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of items can be calculated by a corresponding pseudorandom sequence generating polynomial;
- providing a plurality of pseudorandom sequence generating polynomials;
- identifying a desired subsequent state of the pseudorandom sequence of items;
- iteratively using at least some of the plurality of pseudorandom sequence generating polynomials to generate additional pseudorandom sequence generating polynomials that can calculate additional pseudorandom sequences of items that correspond to additional subsequent states of the pseudorandom sequence of items.

20. The method of claim 19 and further comprising using one of the additional pseudorandom sequence generating polynomials to generate a final pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

21. The method of claim 19 and further comprising:

- using one of the additional pseudorandom sequence generating polynomials to generate a pseudorandom sequence of items that corresponds to a specific subsequent state of the pseudorandom sequence of items; and
- using a next-state pseudorandom sequence generating polynomial to calculate at least one next subsequent state from the specific subsequent state.

22. The method of claim 19 wherein the next subsequent state comprises the desired subsequent state of the pseudorandom sequence of items.

23. The method of claim 19 and further comprising:

- using one of the additional pseudorandom sequence generating polynomials to generate a pseudorandom sequence of items that corresponds to a specific subsequent state of the pseudorandom sequence of items; and
- using slewing to achieve the desired subsequent state of the pseudorandom sequence of items

24. A radio comprising:

- a transceiver;
- synchronization means operably coupled to the transceiver, wherein the synchronization means includes:
  - first means for providing a starting state of a pseudorandom sequence of numbers comprising a synchronizing data stream compatible with a first base station in a code division multiple access wireless communications system, which pseudorandom sequence of numbers has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of numbers can be calculated by a corresponding pseudorandom sequence generating polynomial;
  - second means for providing at least one pseudorandom sequence generating polynomial;
  - third means responsive to the first means for identifying a desired subsequent state of the pseudorandom sequence of numbers, which desired subsequent state comprises a synchronizing data stream compatible with a second base station in the code division multiple access wireless communications system;
  - fourth means responsive to the first means and the third means for using the at least one pseudorandom sequence generating polynomial to generate a first interim pseudorandom sequence generating polynomial that can calculate



a first interim pseudorandom sequence of numbers that corresponds to a first interim subsequent state of the pseudorandom sequence of numbers, which first interim subsequent state is more proximal to the desired subsequent state than the starting state.

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